AMERICAN CYANAMID CO.
PARSIPPANY, NJ 07054

MSDS NO. AG07061-6

MATERIAL SAFETY DATA SHEET — CAS NO. Mixture

DATE: JUN 02, 1997

EMERGENCY TELEPHONE: (973) 835-3100 (U.S.A.)

PRODUCT IDENTIFICATION

TRADE NAME: PROWL(R) 3.3 EC Herbicide

SYNONYMS: Pendimethalin; N-(1-ethylpropyl) -3, 4-dimethyl-2,6-dinitrobenzeneamine; CL92,553

CHEMICAL FAMILY: Dinitroaniline

MOLECULAR FORMULA: $C_{13}H_{19}N_3O_4$

MOLECULAR WEIGHT: 281.350

USAGE: Herbicide

WARNING STATEMENTS

CAUTION!
KEEP OUT OF REACH OF CHILDREN.
AVOID CONTACT WITH EYES, SKIN OR CLOTHING.
DO NOT INGEST.
AVOID BREATHING SPRAYS OR MISTS.

INGREDIENTS

COMPONENT	CAS. NO.	%	PEL/TLV
*Aromatic 200 (14% Naphthalene)	64742-94-5	51.90	100 ppm 563 mg/m^3
*Ethylene Dichloride	107-06-2	0.30	10 ppm 40 ppm (STEL)
Inerts		10.70	
Pendimethalin	40487-42-1	37.40	

*Section 313 Toxic Chemical

REFERENCE: Aromatic 200 (14% Naphthalene) — Exxon - 1992
Ethylene Dichloride — ACGIH - 1996, OSHA - 1993
Inerts
Pendimethalin

PHYSICAL PROPERTIES

APPEARANCE AND ODOR: Dark amber brown liquid; mild aromatic hydrocarbon odor.

BOILING POINT: 244ºC (extrapolated)

MELTING POINT: Not Applicable

VAPOR PRESSURE: 5.6 torr at 25ºC

	SPECIFIC GRAVITY:	1.07 +/- 0.01 g/ml
	VAPOR DENSITY:	Not Available
	% VOLATILITY (BY VOL.):	52%
	OCTANOL / H_2O PARTITION COEF.:	Not Applicable
	PH:	6-7 for a 2-4% aqueous dispersion
	SATURATION IN AIR (BY VOL.):	Not Available
	EVAPORATION RATE:	0.014 (n-butyl acetate = 1.0)
	SOLUBILITY IN WATER:	Emulsifies
FIRE AND EXPLOSION HAZARD INFORMATION	FLASH POINT:	208ºF (SETA Flash)
	FLAMMABLE LIMITS (% BY VOL.)	Not Available
	AUTOIGNITION TEMP:	375ºC
	DECOMPOSITION TEMP:	244ºC

FIRE EXTINGUISHING MEDIA:
Use water, foam, dry chemical or carbon dioxide to extinguish fires.

FIRE CONTROL TACTICS:
Wear self-contained, positive pressure breathing apparatus and full fire fighting protective clothing.

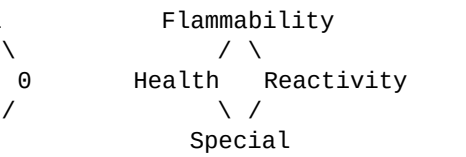
Keep unnecessary people away. Use as little water as possible. Dike area of fire to prevent pesticide run-off. Use spray or fog - solid stream may cause spreading. Do not decontaminate personnel or equipment, or handle broken packages or containers without protective equipment as specified in the Exposure Control Section. Decontaminate emergency personnel with soap and water before leaving the fire area.

Avoid breathing dusts, vapors and fumes from burning materials. Control run-off water - if water enters a drainage system, advise the authorities downstream.

FLAMMABLE/COMBUSTIBLE LIQUIDS:
This material is a Class III combustible liquid, based on its flash points. Storage areas should conform to NFPA 30 and NFPA 70, or local standards, whichever is more stringent.

NFPA HAZARD RATING

0 Least
1 Slight
2 Moderate
3 High
4 Severe



REACTIVITY DATA	STABILITY:	Stable
	CONDITIONS TO AVOID:	Do not store below 40°F. Extended storage at temperatures below 40°F may result in the formation of crystals on the bottom of the container. Do not store above 120°F.
	POLYMERIZATION:	Will not occur
	INCOMPATIBLE MATERIALS:	Avoid contamination with strong oxidizing agents and strong alkali.
	HAZARDOUS DECOMPOSITION PRODUCTS:	Combustion may produce oxides of carbon and nitrogen.

HEALTH HAZARD INFORMATION

TOXICITY DATA AND EFFECTS OF OVEREXPOSURE:

ACUTE TOXICITY DATA:
The acute oral LD_{50} in rats for the combined sexes was shown to be 3956 mg/kg b.w., indicating that the material is slight to moderately toxic by ingestion in single doses.

The acute dermal LD_{50} in rabbits was shown to be greater than 2200 mg/kg b.w. (highest dose tested), indicating that the product is only slightly toxic by dermal application in a single dose.

The material was determined to be mildly irritating to rabbit skin and eyes and shown to be a non-skin sensitizer in appropriate guinea pig studies.

Acute inhalation studies in rats demonstrated that the LC_{50} was greater than 5.35 mg/L (actual) of air over a 4 hour exposure period.

CHRONIC TOXICITY DATA:
This material as formulated has not been tested for chronic toxicity, however, the chronic toxicity of Pendimethalin is as follows:

Mutagenicity:

In an evaluation of data from a battery of six genotoxicity tests, pendimethalin was judged to be nongenotoxic.

Teratogenicity:

No teratogenic or fetotoxic effects were observed in rats or rabbits.

Reproduction:

No reproductive effects were observed in a three-generation reproduction study conducted in rats.

Oncogenicity:

No oncogenic effects were observed at all dosage levels tested in the lifetime (18 months) mouse study. The highest dose tested was 5000 ppm in the diet.

A marked depression in body weight gain, and statistically significant increase in benign thyroid proliferative lesions were observed at the highest dose tested (5000 ppm) in the lifetime (24 months) rat study.

Ethylene Dichloride, which is present at a level of up to 1% in the product, is listed by the International Agency for Research on cancer (IARC) as a possible human Carcinogin.

EMERGENCY & FIRST AID PROCEDURES:

IF SWALLOWED: Do not induce vomiting. Get medical attention.

IF IN EYES: Flush eyes with large amounts of tap water. Get medical attention if irritation persists.

IF ON SKIN: Wash skin with plenty of soap and water. Get medical attention if irritation persists.

IF INHALED: Remove to fresh air.

NOTES TO PHYSICIAN:
Because of increased risk of chemical pneumonia or pulmonary edema caused by aspiration of hydrocarbons into the lungs, vomiting should be induced only under professional supervision.

Pendimethalin is a strongly orange-red colored compound - virtually an aniline dye. Cases have been described of orange-yellow coloration of the urine following heavy exposure of workers to the dust of this compound. Despite its structure as both a nitro-compound and aromatic amine, exposure to pendimethalin is NOT associated with methemoglobinemia.

EXPOSURE CONTROL METHODS

During formulation of this product, the following good industrial hygiene practice is recommended:

When transferring material from one container to another, or where splash hazard exists, wear chemical goggles to prevent eye exposure. Wear rubber gloves when handling this material.

An apron or impermeable covering should be worn where splashing could occur.

Wear a pesticide cartridge respirator when exposure to vapor could occur above the PEL for the various mixture of the product.

Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

For end-users, please refer to product label for personal protective clothing/equipment.

SPILL OR LEAK PROCEDURES

Wearing appropriate protective clothing and equipment (see "Exposure Control" section), dike spill area to prevent spill from spreading, absorb with an inert absorbent material, (e.g. granular clay or sawdust), and shovel/sweep into covered containers for proper disposal (see "Waste Disposal" section). Rinse spill area and tools several times with soapy water. Contain and absorb rinsate with inert absorbents and place into the same disposal container as spilled material. Small spills to the soil can be shoveled directly into disposal containers. In the event of a large spill, contact Cyanamid for guidance on available clean-up options.

Depending on the quantity released to the environment, notifications to regulatory authorities may be required. If spill is to a water body, immediately notify applicable authorities downstream, so that contingencies can be taken, if necessary.

WASTE DISPOSAL: To avoid disposal, all attempts should be made to utilize the product completely, in accordance with its intended and/or registered use. If this is not possible, handle with care, and dispose in a safe manner.

Empty containers may retain some product residues. DO NOT REUSE. Rinse thoroughly, render container unusable by crushing and/or puncturing, and dispose in a safe manner.

This product contains ethylene dichloride, and is therefore regulated as a hazardous waste in the U.S. It is the ultimate responsibility of the waste generator to determine at the time of disposal whether the product (and/or "empty" container residue) meets any other hazardous waste criteria. Follow all applicable Federal, State, Provincial, and Local regulations regarding waste management methods.

Cyanamid's recommended disposal method for this product is: Incineration.

SPECIAL PRECAUTIONS

HANDLING AND STORAGE:

Do not store below 40ºF.

Do not contaminate water, food or feed by storage or disposal. Store in a secure, dry, well-ventilated separate area; away from children, livestock, and food products.

Not for use or storage in or around the home.

Keep away from sources of ignition and protect from exposure to fire and heat.

Segregate from oxidizers and incompatible materials listed in the Reactivity Data Section.

This material is a Class III combustible liquid, based on its flash points. Storage areas must conform to NFPA 30 and NFPA 70, or local standards, whichever is more stringent.

ADDITIONAL REGULATORY INFORMATION

SARA Title III Data

Section 311 and 312 Hazard Categories

Immediate Health Hazard	- Y	Reactive Hazard	- N
Delayed Health Hazard	- N	Sudden Pressure Release Hazard	- N
Fire Hazard	- N		

Section 302 Extremely Hazardous Substances - None

Section 313 Toxic Chemicals - Aromatic 200 (14% Naphthalene)
Ethylene Dichloride

CERCLA Reportable Quantity

PROWL(R) 3.3EC HERBICIDE -
Ingredients: Naphthalene - 100 lbs.
Ethylene Dichloride - 100 lbs.
Product: 1376 lbs. (154 gals.)

RCRA Hazardous Waste Code(s) And Statement(s):

PROWL(R) 3.3E HERBICIDE - D028

*Note: it is the responsibility of the waste generator to determine if any hazardous waste code(s) apply, prior to disposal.

APPENDIX

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.

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